

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	Inventor(s): Mary E. Brunkow et al.

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION  
Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083.508D2

### Common Cysteine Backbone

1		50		
human-gremlin.pro	-----			
human- <b>cerberus</b> .pro	MHLLLFQLLV LLPLGKTTTRH QDGRQNQSSL SPVLLPRNQR ELPTGNHEEA			
human-dan.pro	-----			
human-beer.pro	-----			
51		100		
human-gremlin.pro	-----M SRTAYTVGAL LLLLGTLLPA AEGKKKGSG			
human- <b>cerberus</b> .pro	EKPDLFVAV PHLVAT.SPA GEGQRQREKM LSRFGRFWKK PEREMHPSRD			
human-dan.pro	-----			
human-beer.pro	----- MQLPLA LCLVCLLVHT			
101		150		
human-gremlin.pro	AI.PPPDKAQ HNDSEQTQSP QQPGSRNRGR QQGRGTAMPG EEVLESSQEA			
human- <b>cerberus</b> .pro	SDSEPFPPGT QSЛИQPID.G MKMEKSPLRE EAKKFHHFM FRKTPASQGV			
human-dan.pro	----- MLRVLVGAVL PAMLLAAPPP			
human-beer.pro	AFRVVEGQGW QAFKNDATEI IPELGEYPEP PPELENNKTM NRAENGGRRP			
151	↓	↓	↓	200
human-gremlin.pro	LHVTERKYLK RDWCKTQPLK QTIEEGCNS RTIINRF.CY QCNSFYIPR			
human- <b>cerberus</b> .pro	ILPIKSHEVH WETCRTVPFS QTITHEGCEK VVVQNNL.CF GKCGSVHFP.			
human-dan.pro	INKLALFPDK SAWCEAKNIT QIVGHSGCEA KSIQNRA.CL QCFSYSVPN			
human-beer.pro	HHPFETKDVS EYSCRELHFT RYVTDGPCRS AKPVTELVCS GQCGPARLLP			
201	↓	↓	↓	250
human-gremlin.pro	HIRKEEGSFQ SCSF...CKP KKFTTMMVTL NCPELQPPTK K.KRVTRVKQ			
human- <b>cerberus</b> .pro	..GAAQHSHT SCSH...CLP AKFTTMLPL NCTELSSVIK V...VMLVEE			
human-dan.pro	TFPQSTESLVC HD...CMP AQSMWEIVTL ECPGHEEVPR VDKLVEKILH			
human-beer.pro	NAIGRGKWR PSGPDFRCIP DRYRAQRVQL LCPGEAPRA RKVRLVAS..			
251	↓			300
human-gremlin.pro	CRC.ISIDLD -----			
human- <b>cerberus</b> .pro	CQCKVKTEHE DGHILHAGSQ DSFIPGVSA-----			
human-dan.pro	CSCQACGKEP SHEGLSVYVQ GEDGPGSQPG THPHPHPHPH PGGQTPEPED			
human-beer.pro	CKCKRLTRFH NQSELKDFGT EAARPQKGRK PRPRARSAKA NQAELENAY-			
301	314			
human-gremlin.pro	-----			
human- <b>cerberus</b> .pro	-----			
human-dan.pro	PPGAPHTEEE GAED			
human-beer.pro	-----			

*Fig. 1*

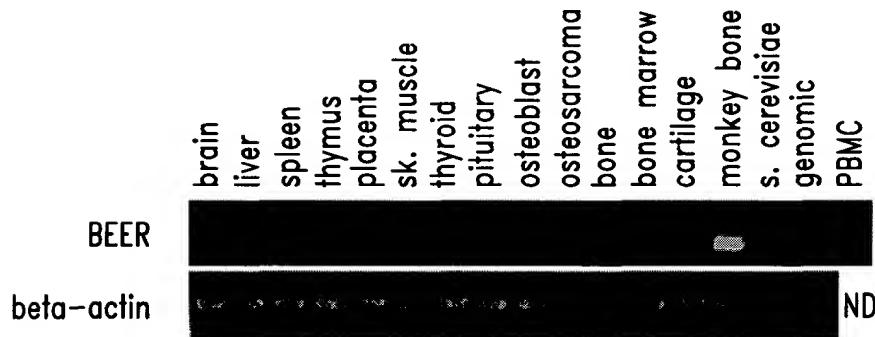
APPROVED BY DRAFTSMAN	O.G. FIG.
	CLASS SUBCLASS

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION

Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083.508D2

Human Beer Gene Expression by RT-PCR



*Fig. 2*

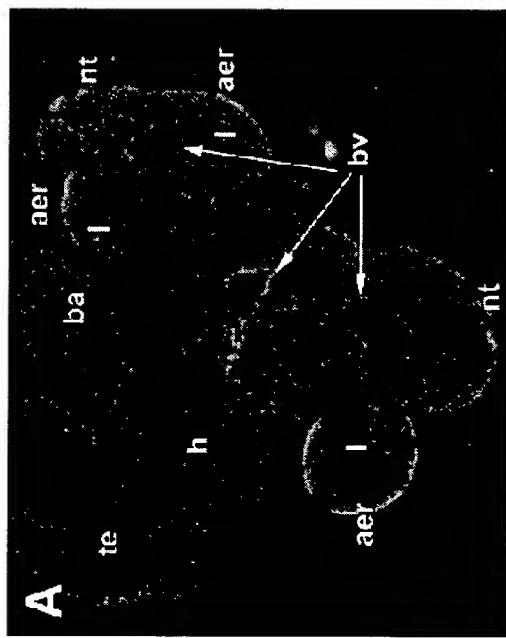
APPROVED BY	O.G. FIG.
DRAFTSMAN	CLASS SUBCLASS

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION

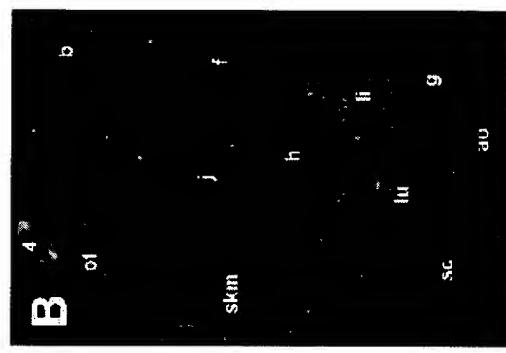
Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083.508D2

**RNA In Situ Hybridization of Mouse Embryo Sections**

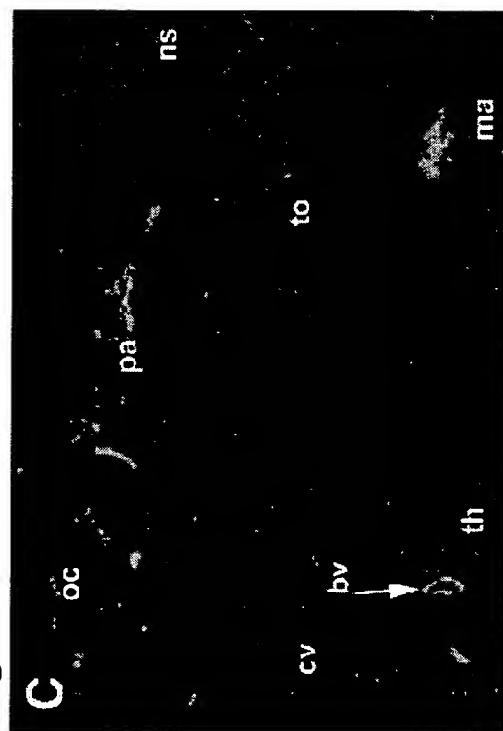


**Fig. 3A**

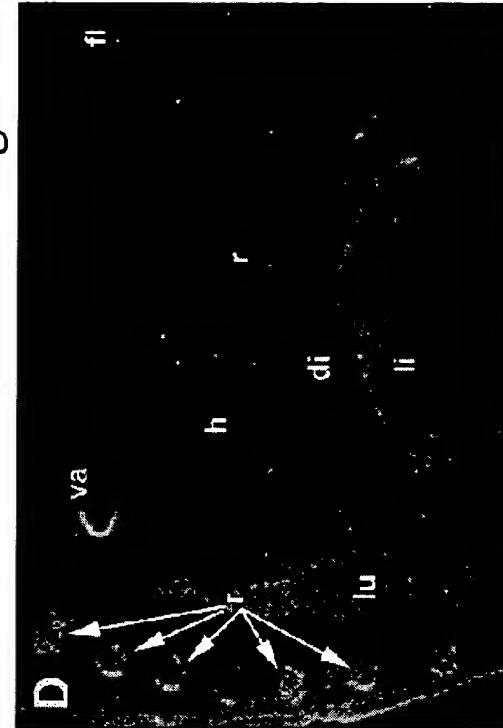


**Fig. 3B**

**Fig. 3C**



**Fig. 3D**



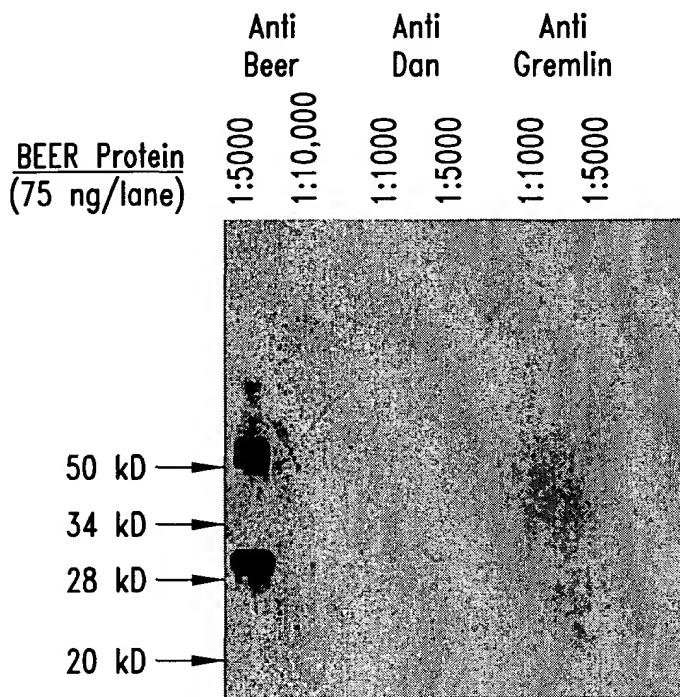
APPROVED	O.G. FIG.
BY	CLASS   SUBCLASS
DRAFTSMAN	

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION

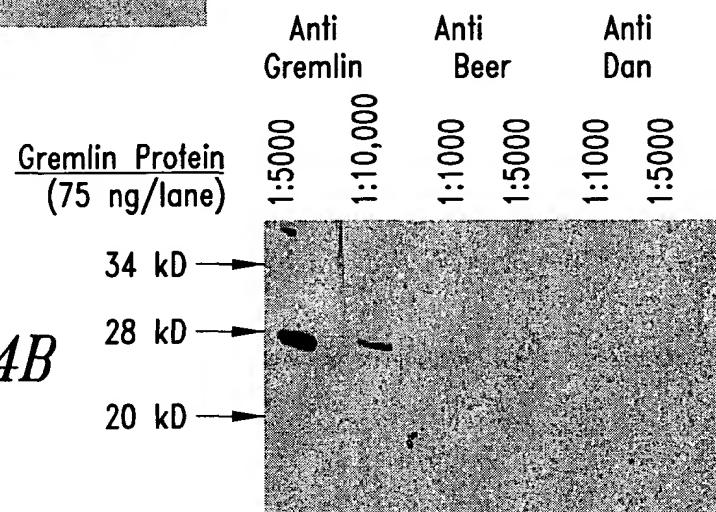
Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083:508D2

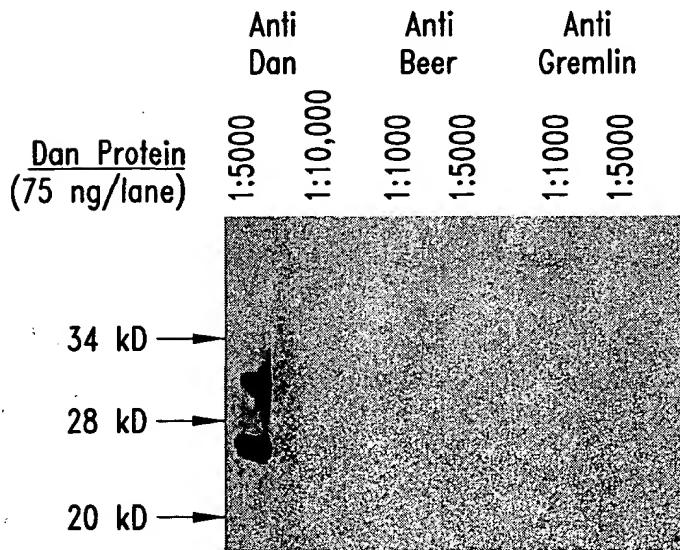
### Antibody Selectivity



*Fig. 4A*



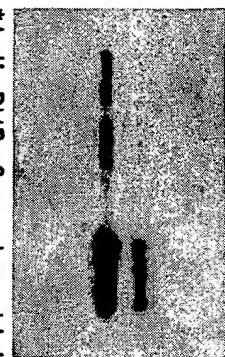
*Fig. 4B*



*Fig. 4C*

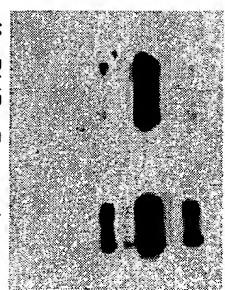
Evaluation of Beer binding to BMP family members  
Anti-FLAG Immunoprecipitation

Beer	+	+	-	BMP-6
BMP-6	+	+	+	control



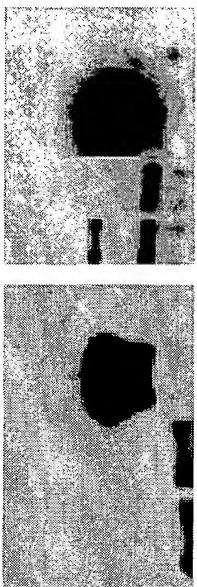
\*Anti-BMP-6 western blot

Beer	+	+	-	BMP-5
BMP-5	+	-		control



\*Anti-BMP-5 western blot

BMP-4	C	-	+	C	-	+	BMP-4
Beer	-	-	-	-	+	+	Beer
Cerberus	-	+	+	-	-	-	Cerberus



\*Anti-BMP-4 western blot

*Fig. 5*

INVENTOR(S): Mary E. Brunckow et al. Serial No. 09/668,021 Docket No. 240083-508D2  
Express Mail No. EL897871282US

Title: COMPOSITIONS AND METHODS FOR INCRESING BONE MINERALIZATION

APPROVED	O.G. FIG.	BY	CLASS	SUBCLASS	DRAFTERMAN
----------	-----------	----	-------	----------	------------

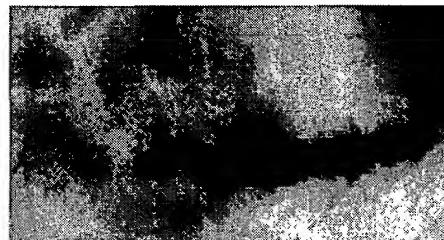
APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	Inventor(s): Mary E. Brunkow et al.

Title: COMPOSITIONS AND METHODS FOR INCREASING BONE MINERALIZATION  
Express Mail No. EL897871282US

Inventor(s): Mary E. Brunkow et al. Serial No. 09/668,021 Docket No. 240083.508D2

### BMP-5/Beer Dissociation Constant Characterization

.75 1.5 7.5 15 30 60 120 nM BMP-5

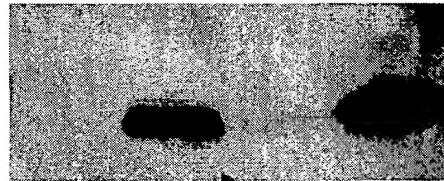


\*Anti-FLAG immunoprecipitation

\*Anti-BMP-5 western blot

### Ionic Disruption of BMP-5/Beer Binding

NaCl(mM)	500	150	150	BMP-5	western control
Beer	+	+	-		
BMP-5	+	+	+		



\*Anti-FLAG immunoprecipitation

\*Anti-BMP-5 western blot

*Fig. 6*